

## Claims

1. A method of tuning a filter, the filter being associated with a center frequency, comprising the steps of:
- 5        configuring said filter as an oscillator;  
         tuning said oscillator to a desired frequency; and  
         reconfiguring said oscillator to operate as said filter with said desired frequency as said center frequency.
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- 10    2. A method of tuning a filter according to claim 1, wherein said step of configuring said filter as an oscillator comprises compensating for losses in the filter.
3. A method of tuning a filter according to claim 1, wherein the filter comprises
- 15    a bandpass filter.
4. A method of tuning a filter according to claim 1, wherein the filter comprises a notch filter.
- 20    5. A method of tuning a filter according to claim 1, wherein the step of tuning said oscillator comprises providing a tuning signal.
6. A method according to claim 5, further comprising the step of recording the tuning signal which causes said oscillator to operate at the desired frequency.
- 25    7. A method according to claim 6, wherein the step of recording the tuning signal comprises sampling and holding the tuning signal.
8. A method according to claim 7, further comprising storing the sampled
- 30    signal in a register.

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9. A method according to claim 1, wherein the filter circuit includes a tank circuit and the step of tuning the oscillator comprises tuning the resonant frequency of the tank.

5 10. A tunable filter, comprising:  
a filter circuit having a center frequency; and  
a configuration circuit operable to configure said filter circuit as an oscillator, whereby to permit said oscillator to be tuned to a desired frequency, said configuration circuit further being operable to reconfigure said oscillator to operate  
10 as said filter with said desired frequency as said center frequency.

11. A tunable filter according to claim 10, wherein the filter circuit is subject to energy losses, wherein the configuration circuit comprises a compensation circuit operable to compensate for said losses.

15 12. A tunable filter according to claim 11, wherein said losses are due to parasitic resistance, the compensation circuit being operable to provide a negative resistance to compensate for the parasitic resistance.

20 13. A tunable filter according to claim 10, wherein the filter circuit comprises a tank circuit.

14. A tunable filter according to claim 10, wherein the filter circuit includes a varactor for tuning the oscillator.

25 15. A tunable filter, comprising:  
a filter circuit having a center frequency; and  
means for configuring said filter circuit as an oscillator, whereby to permit said oscillator to be tuned to a desired frequency, said means further being operable  
30 to reconfigure said oscillator to operate as said filter with said desired frequency as said center frequency.

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21. A programmable filter according to claim 20, wherein the memory includes a plurality of digital words, each word corresponding to a tuning signal which represents a desired center frequency for the filter.

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